

### APPLICANT'S REMARKS

The 4/25/05 Office Action indicates that claims 8, 9, 10, 12, 14, 15, 16, 17 and 19 are rejected under 35 USC 102(b) as being anticipated by Fischer (US 4,263,339) stating:

"Regarding claims 8, 9, 10, 12, 14, 15, 16, 17 and 19, Fischer discloses the use of light emitting device including a white emitting mixture of ZnS:Cu, Al and ZnS<sub>0.2</sub>Se<sub>0.8</sub>:Cu,Al (column 4, lines 19-32). The copper and aluminum are doped in concentrations of 1 mol percent and 0.1 mole percent respectively. (column 5, lines 20-27)"

Applicant understands that according to MPEP Feb. 2003; §706.02(a) pp 700-21, col. 1, under the heading: "DISTINCTION BETWEEN 35 U.S.C. 102 AND 103:, in the fourth sentence of the paragraph that for a rejection under 35USC 102 to be proper, *"the reference must teach every aspect of the claimed invention"*.

Applicants have amended claim 8 herein to exclude the presence of aluminum as a co-activator. In Fischer, the white-emitting material is a mixture which comprises either 1) ZnS/Cu,I combined with ZnS<sub>0.2</sub>Se<sub>0.8</sub>:Cu,Al or 2) ZnS/Cu,Al combined with ZnS<sub>0.2</sub>Se<sub>0.8</sub>:Cu,Al. By amending claim 8 in this fashion, the Fischer reference no longer teaches every aspect of the invention claimed in claims 8, 9, 10, 12, 14, 15, 16, 17 and 19. Accordingly, Applicants respectfully request that the rejection of these claims be reconsidered in view of the claim amendment presented herein and withdrawn. Since claim 8 is the independent claim from which claims 9, 10, 12, 14, 15, 16, 17 and 19 depend, and since claim 8 has been amended to no longer be anticipated by the prior art, it is respectfully submitted that claims 9, 10, 12, 14, 15, 16, 17 and 19 should now be in condition for allowance.

The 4/25/05 Office Action indicates that claims 8, 9, 12, 13, 21, 22, 27, 28 and 32-34 are rejected under 35 USC 102(e) as being anticipated by Matsubara et al. (US 6,509,651) stating:

"Regarding claims 8, 9, 12, 13, 21, 22, 27, 28 and 32-34, Matsubara discloses the use of white light emitting diode including an active layer of ZnSe:Cu,I. (column 7, lines 25-44) and (column 8, lines 20-40). The copper and iodine are doped in concentrations of  $1 \times 10^{17} \text{ cm}^{-3}$  or around 0.0003 mol percent. (column 14 lines 62-67)"

Applicants respectfully submit that the language of claim 8 in Applicants' specification specifically requires the presence of both sulfur and selenium. The Matsubara et al. reference does not teach the presence of sulfur and selenium in the phosphor materials. Accordingly, the rejection of claims 8, 9, 12, 13, 21, 22, 27, 28 and 32-34 under 35 USC § 102(e) should be reconsidered and withdrawn.

Applicants have further amended claims 8, 9, 11, 20, 21, and 32 to require that the value of the variable x cannot be zero, thus requiring the presence of both sulfur and selenium. Support for the new ranges of x in claims 9, 11, and 12 and the amendments to claims 8, 20, and 32 is found in the original specification at page is, line 18. Claim 13 has been cancelled.

The 4/25/05 Office Action indicates that claims 1, 2, 5, and 6 are rejected under 35 USC 102(b) as being anticipated by Larach (US 2,742,376), stating that:

"Regarding claims 1, 2, 5, and 6, Larach discloses the use of phosphor including one of ZnSe:Cu and  $\text{ZnS}_{0.1}\text{Se}_{0.9}:\text{Cu}$ . (column 3, lines 1-11). The copper is doped in concentrations of 0.01 mol percent."

Applicants have cancelled claim 6 herein. Further, Applicants have amended the ranges recited in claims 2 and 5 to avoid reading on the prior art identified in the Office Action. Support for the

new ranges in these claims is found on page 22 of the original specification at lines 8-13 wherein the full meaning of ranges such as  $0 \leq x \leq 1$  within the scope of the present invention is described to include all ranges encompassed between any two selected values which reside between 0 and 1.

Thus, in view of the claim amendments presented herein, Applicants believe that the 35 USC § 102(b) rejection based on Larach should no longer be applicable to claims 1, 2, 5, and 6 and respectfully request the examiner to reconsider and withdraw these rejections.

The 4/25/05 Office Action indicates that claims 1-3, 7-10, 14-17, and 20-34 are rejected under 35 USC 102(e) as being anticipated by Bokor et al. (US Pub. 200400056256) stating:

"Regarding claims 1-3, 7-10, 14-17, and 20-34, Bokor discloses the use of light emitting device including a white emitting mixture of ZnS:Cu and ZnS:Cu,Al. (Page 3 paragraph 030) and (Table 4). The copper and aluminum are doped in concentrations of 5 mol percent. (Page 3 paragraph 020).

Respecting claims 1-3, Applicants amendment to claim 1 herein is believed sufficient to render Bokor no longer applicable as a reference for purposes of 35 USC § 102(b). As regards claim 7, this claim has been cancelled by Applicants herein. Regarding claims 8-10, 14-17 and 20-34, Applicant's claims all require the presence of both selenium and sulfur, whereas Bokor does not teach phosphors having both of these elements. Since a reference must teach all aspects of an invention in order to qualify as prior art under § 102(b) of the patent statutes, we believe this feature of Applicants claims renders Bokor inapplicable. Further, Applicants have amended their claims to no longer cover the presence of aluminum as an activator component.

Thus, Applicants respectfully submit that certain of the original claims (6, 7, 13, 14) in

the present Application have been cancelled herein by amendment. Narrowing amendments have been effected to many of the remaining claims (1, 2, 5, 8, 9, 11, 12, 20, 21, 32) so they no longer read on the prior art identified in the 4/25/05 Office Action, with the exception of claim 4, which has been re-written in independent form, for the reason outlined in the next paragraph:

Since claim 1 was amended herein to include a lower limit for the variable  $x$  of 0.2 in order to render claim 1 to no longer read on the prior art, this left Applicants in a precarious position with respect to the subject matter of claim 4, which was indicated in the first Office Action as defining patentable subject matter, since values for  $x$  between 0 and 0.5 are patentable when  $y$  is within the same range, per the last paragraph of page 3 of the 4/25 Office Action. Accordingly, in order to capture such subject matter Applicants deem it most proper to include all of the limitations of the base claim 1 into the language of claim 4. The Commissioner is hereby authorized to charge any necessary fees to Deposit Account 500818 for converting claim 4 from dependent to independent status; provided the remaining independent claims are in condition for allowance.

Thus, Applicants respectfully submit that all pending claims should be in condition for allowance. Thank you for your consideration.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Christopher J. Whewell", with a stylized, cursive script.

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